# U.S. Nuclear Regulatory Commission Implementation Plan for the Radiation Source Protection and Security Task Force Report

## Introduction

The Energy Policy Act of 2005 (EPAct) created an interagency task force on radiation source protection and security under the lead of the U.S. Nuclear Regulatory Commission (NRC). The Interagency Radiation Source Protection and Security Task Force (Task Force) evaluates and makes recommendations to the President and Congress relating to the security of radiation sources in the United States from potential terrorist threats, including acts of sabotage, theft, or use of a radiation source in a radiological dispersal device (RDD).

In particular, the Task Force evaluates and makes recommendations, which can include possible regulatory and legislative changes, on several specific topics related to the protection and security of radiation sources. For the purposes of the Task Force, the EPAct defines a radiation source as a "Category 1 Source or a Category 2 Source as defined in the Code of Conduct[1] and any other material that poses a threat such that the material is subject to this section, as determined by the Commission, by regulation, other than spent nuclear fuel and special nuclear material." Although the EPAct refers to "radiation sources," this implementation plan uses the more common term, "radioactive sources."

The Task Force submits its reports to Congress and the President; it submitted its first report on August 15, 2006. The Task Force will submit subsequent reports not less than once every 4 years. The Task Force submitted its second report on August 11, 2010, and its third report on August 14, 2014. The first report contained 10 recommendations and 18 actions, the second report contained 11 additional recommendations, and the third report contained 3 new recommendations that address the security and control of radioactive sources.

The EPAct further requires that the Commission "...in accordance with the recommendations of the task force...take any action the Commission determines to be appropriate, including revising the system of the Commission for licensing radiation sources." The staff has developed this implementation plan to outline and track the actions that the NRC plans to take to address the open recommendations and actions contained in the 2014 Task Force report.

### Development of the Implementation Plan

The plan, as developed by the Task Force, for implementing the Task Force recommendations and actions includes a specific implementation plan for each of the open recommendations and actions. The NRC Office of Nuclear Material Safety and Safeguards (NMSS), Office of Nuclear Security and Incident Response (NSIR), Office of International Programs (IP), Office of the General Counsel (OGC), and Office of Public Affairs (OPA) are involved in the implementation of the recommendations and actions. Other agencies involved in implementation are the U.S. Department of Homeland Security (DHS), Federal Emergency Management Agency (FEMA), Transportation Security Administration (TSA), Department of State (DOS), U.S. Department of Transportation (DOT), U.S. Department of Defense (DOD), Federal Bureau of Investigations (FBI), Central Intelligence Agency (CIA), U.S. Environmental Protection Agency (EPA), U.S. Department of Commerce (DOC), U.S. Department of Energy (DOE), the National Nuclear Security Administration (NNSA), which is a separately organized agency within DOE, Department of Justice (DOJ), U.S. Food and Drug Administration (FDA), U.S. Department of Health and Human Services (HHS), and Office of the Director of National Intelligence (ODNI).

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[1] "Code of Conduct" refers to the "Code of Conduct on the Safety and Security of Radioactive Sources," approved by the Board of Governors of the International Atomic Energy Agency (IAEA) and published January 2004.

Organization of the Implementation Plan

Each entry in the main body of the plan presents a strategy for implementing the open Task Force recommendations or actions. Where appropriate, the individual plans include task breakdowns and a discussion of any known issues that could challenge implementation.

The implementation plan is a living document. NMSS updates the plan as implementation of the recommendations and actions progresses.

## Implementation Plans for Individual Recommendations and Actions

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|---|---|---|
| **2006 Recommendation 4-2** | **Coordination and Communication for Radiation Protection and Security Programs** | Task Force/NRC lead |
| | | Complete |

Task: The Task Force recommends that the Federal agencies and States continue efforts to improve coordination and communication of their ongoing activities in the area of radiation protection and security for Category 1 and 2 sources.

Most Recent Citation: 2014 Report (Chapter 1—Advances in the Security and Control of Radioactive Sources)

2014 Report Context: The 2014 Report states the following:

> Significant improvement in Federal, State, Tribal, and stakeholder communication and cooperation has been achieved. There are a number of groups that continue to meet and forums that are held in order to continue addressing policy and programmatic issues. The Task Force continues to coordinate interagency issues and monitor other cooperative efforts. Specifically, as directed by the EPAct and its own charter, the Task Force is able to evaluate and provide recommendations on the security of Category 1 and 2 radioactive sources from an overarching perspective, including manufacture, import/export use, transportation, storage, and disposal. As a result, the Task Force is able to assess areas in which there may not be actions underway or programs in place that could benefit from further attention. (2014 Task Force Report, pp. 5-6)

Potential Issues: No known issues.

Agencies Involved: All Task Force agencies.

Program Office Action: The Task Force, led by the NRC, facilitates the coordination and communication of activities. The Director of NMSS serves as the point of contact for Task Force activities, and the NMSS staff coordinates the Task Force activities. The Task Force will continue to meet at least twice a year to discuss topics of interest and to receive status reports on the implementation of the recommendations and actions. The Task Force will meet with other committees, task forces, working groups, and organizations to exchange information on activities. The Task Force will also consider hosting periodic public meetings. Task Force members will strive to keep other members informed of various presentations and activities by informing the Task Force of meetings and providing presentation material to other members, when appropriate, for information purposes only.

NRC staff participation on other committees and working groups, which involve outside stakeholders, also serves to promote coordination and communication.

A formal flowchart was developed and approved by the National Government Coordinating Council (NGCC) and Task Force (winter 2011) to memorialize the communication process between the Task Force and NGCC, in which the Task Force is to provide any information it wants to relay to the NGCC via the Radioisotopes Subcouncil. The intention of this process is

for the Task Force to utilize an already established group that has industry involvement when needed. The Task Force would be able to request outside stakeholder input (outside of the Federal and State family) through the Subcouncil on particular issues, when the Task Force deems necessary.

Resources: The NMSS budget has ongoing resources necessary to run the Task Force. Participation in other committees and working groups will be covered as part of routine activities.

| 2006 Recommendation 4-2 | | |
|---|---|---|
| **Tasked Office** | **Breakdown into Subtasks** | **Due Date** |
| NMSS, FSME | Hold Task Force meeting—9/06 | Complete |
| NMSS, Task Force | Provide implementation information to NRC | Initial complete; updates will be ongoing |
| FSME, Task Force | Hold Task Force meeting—12/6/06 | Complete |
| FSME, Task Force | Issue integrated implementation plan—3/7/07 (SECY-07-0046, "Integrated Implementation Plan for the Radiation Source Protection and Security Task Force") | Complete |
| FSME, Task Force | Hold Task Force meeting—4/25/07 | Complete |
| FSME, Task Force | Hold Task Force meeting—11/29/07 | Complete |
| FSME, Task Force | Hold Task Force meeting—5/18/08 | Complete |
| FSME, Task Force | Hold Task Force meeting—10/1/08 | Complete |
| FSME, Task Force | Hold Task Force meeting—2/26/09 | Complete |
| FSME, Task Force | Hold Task Force meeting—7/8/09 | Complete |
| FSME, Task Force | Hold Task Force meeting—11/2/09 | Complete |
| FSME, Task Force | Hold Task Force meeting—1/25/10 | Complete |
| FSME, Task Force | Hold Task Force meeting—2/18/10 | Complete |
| FSME, Task Force | Hold Task Force meeting—4/14/10 | Complete |
| FSME, Task Force | Hold Task Force meeting—9/8/10 | Complete |
| FSME | Meeting to discuss harmonizing the efforts (avoid duplication of efforts, achieve efficiencies, and improve public/private sector input through DHS Critical Infrastructure Partnership Advisory Council process) between the NGCC and Task Force—11/10/10 | Complete |
| FSME, Task Force | Hold Task Force meeting—1/19/11 | Complete |
| FSME, Task Force | Hold Task Force meeting—3/16/11 | Complete |

| 2006 Recommendation 4-2 | | |
|---|---|---|
| FSME, Task Force | Hold Task Force meeting—6/15/11 | Complete |
| FSME, Task Force | Hold Task Force meeting—11/9/11 | Complete |
| FSME, Task Force | Hold Task Force meeting—7/25/12 | Complete |
| FSME, Task Force | Hold Task Force meeting—10/17/12<br>Kickoff meeting for 2014 Quadrennial Report | Complete |
| FSME, Task Force | Hold Task Force meeting—10/23/13 | Complete |
| FSME, Task Force | Hold Task Force meeting—11/20/13 | Complete |
| FSME, Task Force | Hold Task Force meeting—2/4/14 | Complete |
| FSME, Task Force | Hold Task Force meeting—3/20/14 | Complete |
| FSME, Task Force | Hold Task Force meeting—4/29/14 | Complete |
| FSME, Task Force | Hold Task Force meeting—7/10/14 | Complete |
| FSME, Task Force | Hold Task Force meeting—7/22/14 | Complete |
| FSME, Task Force | Hold Task Force meeting—10/1/14 | Complete |
| NMSS, Task Force | Hold Task Force meeting—12/4/14 | Complete |
| NMSS, Task Force | Hold Task Force meetings—Ongoing | Spring and fall of each year or as requested as directed in the Task Force charter |

| 2006 Recommendation 5-1 | Transportation Security Memorandum of Understanding | NRC lead |
|---|---|---|
| | | Complete |

Task: The Task Force recommends development of a transport security memorandum of understanding (MOU) to serve as the foundation for cooperation in the establishment of a comprehensive and consistent transport security program for risk-significant sources.

Most Recent Citation: 2014 Report (Chapter 1—Advances in the Security and Control of Radioactive Sources)

2014 Report Context: The 2014 Report states the following: "The MOU for the secure transport of radioactive material was completed and signature is expected in Calendar Year (CY) 2015." (2014 Task Force Report, p. 20).

Potential Issues: No known issues.

Agencies Involved:
Signatories:
NRC, DOT, DHS
Component agencies:
DHS: Transportation Security Administration, U.S. Coast Guard (USCG) and U.S. Customs and Border Protection (CBP)
DOT: Pipeline and Hazardous Material Administration (PHMSA), Federal Aviation Administration (FAA); Federal Rail Administration (FRA); Federal Motor Carrier Safety Administration (FMCSA)
DOE, DOE/NNSA, and DHS/Domestic Nuclear Detection Office (DNDO) (information only)

Program Office Action: No specific NRC program office action necessary.

Resources: This recommendation is complete. No additional resources are necessary.

| 2006 Recommendation 5-1 | | |
|---|---|---|
| **Tasked Office** | **Breakdown into Subtasks** | **Due Date** |
| NSIR | Develop strawman MOU to facilitate discussion | Complete |
| NSIR | Hold meetings to discuss draft MOU | Complete |
| NSIR | Restructure document and coordinate concurrences | Complete |
| DHS | Approve and sign MOU—1/17/15 | Complete |

| | | |
|---|---|---|
| **2006 Recommendation 5-3** | **Development of International Transport Security Guidance** | DOT/NRC/DHS lead |
| | | Complete |

Task: The Task Force recommends that the United States (U.S.) Government immediately develop a strategy and take actions to address the security of international shipments of Category 1 and 2 radioactive sources that transit or are transshipped through the land territory of the United States.

Most Recent Citation: 2014 (Chapter 1—Advances in the Security and Control of Radioactive Sources)

2014 Report Context: The 2014 Report states the following:

> The Task Force conducted a series of meetings with CBP and TSA in 2013 to specifically address transshipment issues. The group was able to conclude from a comparison of CBP Category 1 and 2 quantities of radioactive material transshipment data to Category 1 and 2 quantity domestic, import, and export shipment data tracked in the National Source Tracking System (NSTS) for a certain timeframe that CBP is tracking all the Category 1 and 2 radioactive material transshipments. … Based on the results of the analysis that confirmed the accuracy of the transshipment data captured by CBP, and which also revealed that there are a small amount of transshipments that are being conducted, the group discussed whether or not it is necessary to pursue adding security measures on Category 1 and 2 transshipments. (2014 Task Force Report, pp. 21-22)

Potential Issues: No known issues.

Agencies Involved: NRC, DOT, TSA, CBP, DHS, DOS, DOE, EPA, and OAS.

Program Office Action: The Task Force proposed further engagement with DOT and CBP to address possible implementation of security requirements, policies, or procedures regarding these types of shipments, such as adopting similar security requirements from the new 10 CFR Part 37 rule into the revalidation certifications for Type B packages that may contain transshipped material. The Secure Transport of Radioactive Material MOU, that will incorporate the responsibilities in the regulation of radioactive materials transport, is completed.

Resources: This recommendation is complete. No additional resources are necessary.

| 2006 Recommendation 5-3 | | |
|---|---|---|
| **Tasked Office** | **Breakdown into Subtasks** | **Due Date** |
| NMSS, NSIR | Participate in IAEA transportation guidance working group | Ongoing |
| NRC, DOT, DHS, DOS | Participate in closed Commission meeting on transshipments and domestic shipments—10/24/06 | Complete |
| NSIR | Participate in Radioisotope Subcouncil for the Government Coordinating Council | Ongoing |
| NSIR | Participate in Nuclear Sector Coordinating Council | Ongoing |
| NSIR, NMSS | Participate in Transit and Transshipment Interagency Working Group | Complete |
| Transportation Focus Group | Finalize report—11/22/10 | Complete |
| Task Force | Determine that a Task Force led Subgroup may be needed to initiate analysis with respect to gaps, overlaps, and potentially inconsistent Federal regulations that exist with respect to transshipment—3/16/11 | Complete |
| Senior Level Management from various agencies | Hold a senior level management meeting to discuss transshipment issues with TSA and CBP and path forward with respect to the recommendation—11/4/11 | Complete |
| DHS | Complete and sign MOU, as noted in 2006 Recommendation 5-1, that will incorporate the responsibilities in the regulation of radioactive materials transport—1/17/15 | Complete |
| Task Force | Re-evaluate Task Force role once the data collection by CBP is complete—2013 | Complete |

| 2006 Action 4-1 | Measures to Verify Validity of Licenses | NRC lead |
|---|---|---|
| | | Complete |

Task: The NRC should consider imposing additional measures to verify the validity of licenses, before transfer of risk-significant radioactive sources, on all licensees authorized to possess Category 1 and 2 quantities of radioactive material.

Most Recent Citation: 2014 Report (Chapter 1—Advances in the Security and Control of Radioactive Sources)

2014 Report Context: The 2014 Report states the following:

> In order to make requirements generally applicable to all licensees and allow for public participation, the NRC initiated a rulemaking in which security requirements for use of Category 1 and 2 quantities of radioactive material were incorporated in a new Part of the CFR: 10 CFR Part 37, "Physical Protection of Byproduct Material." … The license verification requirement in 10 CFR Part 37 addresses this action, (i.e., 10 CFR 37.71). Any licensee transferring Category 1 or 2 quantities of radioactive sources to an NRC or Agreement State licensee, prior to conducting such transfer, shall verify with the NRC's License Verification System (LVS) or the license issuing authority, that the transferee's license authorizes the receipt of the type, form, and quantity of radioactive sources to be transferred. (2014 Task Force Report, p. 17)

Possible Issues: No known issues.

Agencies Involved: NRC, Organization of Agreement States (OAS), stakeholders, and CBP.

Program Office Action: Since the 10 CFR Part 37 final rule, which incorporates the LVS requirement, was published in March 2013, no further action is necessary.

Resources: This action is complete. No additional resources are necessary.

| 2006 Action 4-1 | | |
|---|---|---|
| **Tasked Office** | **Breakdown into Subtasks** | **Due Date** |
| NSIR | Provide technical basis to FSME for enhanced security for irradiators and manufacturer and distributor licensees and medium-priority licensees | Complete |
| FSME | Publish Pre-licensing Checklist and the Risk-Significant Radioactive Material Checklist and Implementation Guidance to enhance the basis for confidence that radioactive materials will be used as specified on a radioactive materials license—9/22/08 | Complete |
| FSME | Provide proposed rule on enhanced security and control of byproduct material licensees (this is a combination of several security rulemakings) to the Commission—12/14/09 | Complete |
| FSME | Provide final rule on enhanced security and control of byproduct material licensees (this is a combination of several security rulemakings) to the Commission—12/8/11 (SECY-11-0170) | Complete |
| FSME | Deployment of LVS—May 2013 | Complete |

| 2006 Action 6-2 | National Database for Materials Licensees | NRC lead |
|---|---|---|
| | | Complete |

Task: The NRC should evaluate the feasibility of establishing a national database for materials licensees that would contain information on pending applications and information on individuals cleared for unescorted access.

Most Recent Citation: 2014 Report (Chapter 1—Advances in the Security and Control of Radioactive Sources)

2014 Report Context: The 2014 Report states the following:

> The NRC completed a two-part analysis to evaluate this recommendation. The analysis concluded that the first portion of the action related to pending applications was addressed by the Web-Based Licensing system (WBL), which was deployed by the NRC on August 31, 2012. . . . The NRC conducted a feasibility assessment on the second portion of the action related to a system that would contain information on individuals cleared for unescorted access and determined that it is not feasible at this time to implement a National database for materials licensees that contains "information on individuals cleared for unescorted access." Staff involved in the development of the implementation guidance for the new 10 CFR Part 37 rulemaking conducted scoping activities with various interested industry groups to confirm that the development of such a database was not feasible at this time. (2014 Task Force Report, p. 13)

Potential Issues: No known issues.

Agencies Involved: NRC, OAS, stakeholders, DHS, and FBI.

Program Office Action: Since an evaluation on the need for such a database of those individuals who are being considered for unescorted access was completed and WBL has been deployed, which contains information on pending license applications, no further action is necessary.

Resources: This action is complete. No additional resources are necessary.

| 2006 Action 6-2 | | |
|---|---|---|
| **Tasked Office** | **Breakdown into Subtasks** | **Due Date** |
| NSIR | Preliminary evaluation of the issue | Complete |
| Working Group | Evaluate issue and make recommendation to FSME management regarding feasibility of individuals cleared for unescorted access—2/23/12 | Complete |
| FSME | FSME management endorsement of recommendations regarding feasibility of individuals cleared for unescorted access | Complete |
| FSME | Deployment of WBL—8/31/12 | Complete |

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|---|---|---|
| **2006 Action 9-1** | **Greater than Class C Waste** | DOE lead |
| | | Ongoing |

Task: DOE should continue its ongoing efforts to develop GTCC [LLRW] disposal capability.

Most Recent Citation: 2014 Report (Chapter 2—Status of the Recovery and Disposition of Radioactive Sealed Sources)

2014 Report Context: The 2014 Report states the following:

> Pursuant to the Low-Level Radioactive Waste Policy Amendments Act (LLRWPAA), DOE is responsible for disposal of GTCC low-level radioactive waste (LLRW), including sealed sources that are determined to be waste and classified as GTCC LLRW. … On February 18, 2011, DOE issued the Draft Environmental Impact Statement for the Disposal of GTCC LLRW (DOE DEIS) for public review and comment. The DOE DEIS evaluates disposal options for GTCC LLRW, which includes many Category 1 and 2 sealed sources. DOE continues to work on the Final GTCC LLRW EIS.
>
> Before making a final decision on the disposal alternative(s) to be implemented, DOE will submit a report to Congress regarding the disposal alternatives considered in the EIS and await Congressional action. As required by Section 631 of the EPAct, the Report to Congress will identify and describe the alternatives under consideration, the types of waste involved, the Federal and non-Federal disposal options, a process for safe disposal of the waste, and any statutory changes or new authorities required for implementation. The report will also include options for ensuring that those who benefit from the activities resulting in waste generation will bear reasonable costs for its disposal. (2014 Task Force Report, p. 40)

Potential Issues: Legislative changes may be required for DOE to implement disposal alternatives identified in the GTCC EIS.

Agencies Involved: DOE, EPA, and NRC.

Program Office Action: DOE has the lead for this action. EPA is a cooperating agency on the GTCC EIS. On July 23, 2007, DOE issued a Notice of Intent to prepare the EIS (Volume 72, page 40135, of the *Federal Register*). DOE issued a Draft EIS on February 18, 2011 and is working towards issuing its final EIS. Before making a final decision on the disposal alternative(s) to be implemented, DOE will submit the report to Congress required by Section 631 of the EPAct and will await Congressional action. No specific NRC program office action is necessary.

Resources: No specific resources are necessary.

| 2006 Action 9-1 | | |
|---|---|---|
| **Tasked Office** | **Breakdown into Subtasks** | **Due Date** |
| FSME | Comment on the Draft DOE EIS on GTCC waste—8/5/11 | Complete |
| DOE | Issue Final GTCC EIS and report to Congress | TBD |

| | | |
|---|---|---|
| **2006 Action 10-1** | **International Harmonization of Import/Export Controls** | DOS lead |
| | | Complete |

Task: The U.S. Government should continue the efforts to promote international harmonization of import and export controls for Category 1 and 2 radioactive sources.

Most Recent Citation: 2014 Report (Chapter 1—Advances in the Security and Control of Radioactive Sources)

2014 Report Context: The 2014 Report states the following:

> Since the 2010 Task Force report, the U.S. has continued to support IAEA efforts to strengthen and harmonize application of export controls for radioactive sources. Part of this effort was aimed at encouraging nations to make a political commitment to work towards following the IAEA Import/Export Guidance, a document that is supplementary to the Code of Conduct, published in 2005. To date, 89 nations have made a political commitment to follow the Import/Export Guidance and of these nations, 31 made this commitment since 2010.
>
> In 2011-12, the U.S. took a major role in the IAEA process to review and revise the Import/Export Guidance document in order to update and clarify its provisions. In particular, the Annex of the Import/Export Guidance was rewritten to more adequately assess an importing State's ability to appropriately manage sources. The revised Import/Export Guidance was approved by the IAEA Board of Governors in 2012.
>
> The U.S. was instrumental in convening the 10-member *ad hoc* Group of countries that are major suppliers of radioactive sources, to continue a dialogue on ways to improve harmonized implementation of the Import/Export Guidance so as not to undercut suppliers. The U.S. co-leads the drafting of the document entitled "Best Practices for the Import and Export of Radioactive Sources," that is currently being developed by the Group. (2014 Task Force Report, p. 23)

Potential Issues: No known issues.

Agencies Involved: DOS, NRC, DOE, DOE/NNSA, and Office of the Secretary of Defense.

Program Office Action: DOS had the lead for this action. The Task Force agencies, including the NRC, will continue to engage with the international community on harmonized application of import/export controls of Category 1 and 2 materials, as directed by the Task Force Charter.

Resources: This action is complete. No additional resources are necessary.

| 2006 Action 10-1 | | |
|---|---|---|
| **Tasked Office** | **Breakdown into Subtasks** | **Due Date** |
| DOS, NRC (IP, NMSS), DOE, DOE/NNSA | Participate in relevant international conferences and meetings | Ongoing, as directed in the Task Force Charter |
| DOS, NRC (IP, NMSS), DOE, DOE/NNSA | Encourage countries to implement Import/Export Guidance through bilateral and multilateral forums | Ongoing, as directed in the Task Force charter |
| DOS, NRC (IP, NMSS), DOE, DOE/NNSA | Promote better accounting of high-activity sources being exported. Encourage the development and universal usage of an international form to communicate to exporting country that a Category 1 source has been received by the importing country and not diverted or lost en route. | Complete (Proposed in 12/07; developed and agreed to in 5/08) |

| 2006 Action 10-2 | Regulatory Impediments to the Return of Disused Sources | DOS/DOE lead |
|---|---|---|
| | | Ongoing |

Task: The U.S. Government should encourage suppliers to provide arrangements for the return of disused sources and examine means to reduce regulatory impediments that currently make this option unavailable.

Most Recent Citation: 2014 Report (Chapter 1—Advances in the Security and Control of Radioactive Sources)

2014 Report Context: The 2014 Report states the following:

> Since the 2010 Task Force report, some recent positive developments include:
>
> The U.S. took an active role in assisting the IAEA with organizing the *International Conference on the Safety and Security of Radioactive Sources: Maintaining Continuous Control Throughout the Lifecycle,* October 2013 in Abu Dhabi, United Arab Emirates. The U.S. was instrumental in developing one of the key findings of the Conference: that the IAEA should develop additional guidance at the international level which may be supplementary to the Code of Conduct dedicated to end-of-life management of radioactive sources, including guidance on the return of disused sources;
>
> On August 28, 2013, the NRC published a "Branch Technical Position (BTP) on the Import of Non-U.S. Origin Radioactive Sources" (78 FR 53020) to provide additional guidance on the application of a 2010 NRC rule on the export and import of radioactive sources. … As such, the BTP facilitates the return of sources to the U.S. under a general license and, in doing so, supports U.S. policy to prevent sources from being orphaned overseas where regulatory programs may not exist or function to an optimal level;
>
> The U.S. has continued to meet periodically with other major source exporting countries to discuss best practices associated with the repatriation of legacy sources without viable, commercially available reuse or recycle options;
>
> Canada's Department of Foreign Affairs, Trade, and Development and the DOE are in discussions with the Brazilian National Nuclear Energy Commission to collaborate on a tripartite project to remove Canadian- and U.S.-origin disused high-activity sources from Brazil. It is contemplated that the U.S.-origin sources would be repatriated to the U.S. and the Canadian-origin sources would be shipped to another country for recycling;… (2014 Task Force Report, pp. 23-24)

Potential Issues: In the U.S., NRC rules allow for the return of sources without considering the sources to be radioactive waste. A license is required in order to return the sources. The availability of Type B packages designed to meet international standards could impact the ability to return sources.

Agencies Involved: DOE, DOS, NRC, and DOT.

Program Office Action: DOE and DOS have the lead for this item. NRC would participate as appropriate. IP will review and approve import licenses for source return, as appropriate. NMSS will review and approve new package designs, as appropriate.

Resources: This activity is not specifically budgeted; package reviews and licensing reviews are part of routine activities.

| 2006 Action 10-2 | | |
|---|---|---|
| **Tasked Office** | **Breakdown into Subtasks** | **Due Date** |
| IP | Review import license applications | TBD upon submittal |
| NMSS | Review new package design applications | TBD upon submittal |
| DOS | Use bilateral and multilateral forums to encourage supplier countries to reduce regulatory impediments to the return of sources at the end of their useful lives | Ongoing -<br><br>October 2014: DOE and NRC representatives from IP, NMSS, and NSIR actively participated as part of a U.S. interagency team in an IAEA-hosted and organized, "Open-ended Meeting of Technical and Legal Experts on the Code of Conduct on the Safety and Security of Radioactive Sources with Regard to Long Term Strategies for the Management of Disused Sealed Radioactive Sources." The objective of the meeting was to develop and harmonize the "Guidance on the Long-term Management of Disused Radioactive Sources," which was created in response to recommendations made at the 2013 Abu Dhabi meeting. On the margins of this meeting, DOE and NRC staff as part of the U.S. delegation also participated in meetings of the Ad Hoc Group of States that Are Major Suppliers of Radioactive Sources to further discuss issues pertinent to major suppliers. |
| DOS/DOE/NRC | Pursue IAEA Information Circular (INFCIRC) process for Repatriation Best Practices draft document | Ongoing |

| 2006 Action 10-2 | | |
|---|---|---|
| NRC support | Finalize Canada-led document on Common Understandings and Regulatory Best Practices Regarding the Import and Export of Category 1 and 2 Radioactive Sources | Ongoing |
| DOS/DOE/NRC | Work with the IAEA and other Member States to finalize the Code of Conduct Disused Source Guidance | Ongoing |

| 2006 Action 10-3 | Discourage Export of Sources as an Alternative to Disposal | DOE/DOS lead |
|---|---|---|
| | | Complete |

Task: The Task Force suggests the use of education and the creation of incentives to discourage the export of used Category 1 and 2 radioactive sources as an alternative to disposal.

Most Recent Citation: 2014 Report (Chapter 1—Advances in the Security and Control of Radioactive Sources)

2014 Report Context: The 2014 Report states the following:

> Updates to export control regulations for radioactive sources have allowed for considerable progress on this action by permitting the NRC and regulatory bodies in other countries greater ability to screen sources to ensure that they are not being exported abroad as an alternative to disposal. Specifically, under the NRC's export licensing program, the importing country must consent to the import of a Category 1 source or device before shipment; pertinent documentation is required to be provided to the importer regarding the age and activity of the source; and the NRC regulations exclude disused sources that are being returned to an authorized entity from the regulatory definition of radioactive waste. This facilitates their return to the U.S. supplier at the end of their useful life (thereby reducing the probability of them being retransferred to another country as a means of disposal). (2014 Task Force Report, p. 24)

Potential Issues: No known issues.

Agencies Involved: NRC, DOS, DOE, HHS, and EPA.

Program Office Action: DOE and DOS were co-leads for this item. As part of the review of export licenses, IP considers the approval or authorizations issued by the foreign country. For Category 1 sources, government-to-government consent is necessary before the source can be approved for export to the foreign country. No further action is necessary.

Resources: This action is complete. No additional resources are necessary.

| 2006 Action 10-3 | | |
|---|---|---|
| **Tasked Office** | **Breakdown into Subtasks** | **Due Date** |
| IP | Review requests for export licenses | Completed upon submittal. Since 2006, implementation of the import/export controls in the U.S. and elsewhere have helped address this issue. The importing country is notified of import and for Category 1 sources, must consent to the import; prior to shipment, the recipient must demonstrate it has the necessary authorization to possess the material, and the NRC regulations facilitate the return of disused sources to the U.S. supplier by allowing applicants to apply for a combined export and import license. |

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|---|---|---|
| **2010 Recommendation 1** | **Adoption of List of Radionuclides that Warrant Enhanced Security and Significant RED and RDD Definitions** | All Task Force Agencies lead |
| | | Complete |

Task: The Task Force recommends that U.S. Government agencies use the radionuclides and the associated Category 2 threshold quantities in Table II, "Radionuclides that Warrant Enhanced Security and Protection" (as shown on page 11 of the 2010 Task Force report), as the appropriate framework for considering which sources warrant enhanced security* and that they adopt the definitions for a significant RED and a significant RDD (as shown on page 8 of the 2010 Task Force report) for prioritizing and allocating resources to eliminate, control, or mitigate risks of malevolent radiological incidents. * By warrants enhanced security and protection is meant enhanced in comparison to the security and protection applied to radioactive sealed sources before September 11, 2001.

Most Recent Citation: 2014 Report (Chapter 1—Advances in the Security and Control of Radioactive Sources)

2014 Report Context: The 2014 Report states the following: "Refer to Table 1-2 with respect to the individual agencies' status in addressing the recommendation." (2014 Task Force Report, p. 8)

Potential Issues: No known issues.

Agencies Involved: NRC, DOS, DOE/Office of Environment, Health, Safety and Security (EHSS), DOE/NNSA/GTRI, DHS/DNDO, and DHS/Infrastructure Protection.

Program Office Action: Each applicable agency, including the NRC, submitted a brief description of how the definitions and IAEA Code of Conduct list of radionuclides and their associated Category 2 threshold quantities were being used, and any plans for incorporating their use, to eliminate, control, or mitigate risks of malevolent radiological incidents. In addition, some of these agencies provided, if applicable, references to various agencies' documents and planning policy guidance documents that incorporate these definitions and the use of the list. No further action is necessary.

Resources: This recommendation is complete. No additional resources are necessary. However, if the list of radioactive sources that warrant enhanced security and protection changes on the basis of a reevaluation, per 2006 Recommendation 3-1, this recommendation would have to be reevaluated as well.

| 2010 Recommendation 1 | | |
|---|---|---|
| **Tasked Office** | **Breakdown into Subtasks** | **Due Date** |
| Task Force | Agencies input on how the definitions and IAEA Code of Conduct list of radionuclides and their associated Category 2 threshold quantities are used. Agencies nominate participant on a Task Force subgroup to evaluate and consolidate agency inputs—11/9/11 | Complete |
| Subgroup | Evaluate U.S. Government agencies' radioactive material security activities for consistency with the Task Force recommendation. Consolidate agency inputs with respect to this recommendation and incorporate in 2014 Task Force report. | Complete |

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| **2010 Recommendation 2** | **Reevaluation of Protection and Mitigation Strategies** | All Task Force Agencies lead |
| | | Ongoing |

Task: The Task Force recommends that the U.S. Government agencies should reevaluate their protection and mitigation strategies to protect against significant RED or RDD attack using both potential severe immediate or short-term exposure and contamination consequences to public health, safety, and the environment as the consequences of concern. Agencies should use the Task Force-endorsed definitions, radionuclides, and thresholds for a significant RED and RDD and the associated assumptions and parameters as common guidance in the assessment of risk and management of homeland security activities.

Most Recent Citation: 2014 Report (Chapter 1—Advances in the Security and Control of Radioactive Sources)

2014 Report Context: The 2014 Report states the following: "Refer to Table 1-2 with respect to the individual agencies' status in addressing the recommendation." (2014 Task Force Report, p. 8)

Potential Issues: No known issues.

Agencies Involved: All Task Force agencies.

Program Office Action: Each agency, including the NRC, is to submit a brief description of its plans to reevaluate their protection and mitigation strategies to protect against a significant RED or RDD attack based on the Task Force-endorsed definitions, radionuclides, thresholds, and the associated assumptions and parameters as common guidance. In addition, each agency is to provide an appropriate breakdown of major subtasks and estimated due dates needed to incorporate these definitions and the use of the list into their various agency's documents and planning policy guidance. Lastly, each agency should indicate if this action would require regulatory, policy and/or legislative actions. Input for each applicable agency was provided in the 2014 Task Force report and the report highlighted the completion and/or status of their analysis for this particular recommendation.

Resources: No additional resources are necessary. However, if the list of radioactive sources that warrant enhanced security and protection changes on the basis of a reevaluation, per 2006 Recommendation 3-1, this recommendation would have to be reevaluated as well.

| 2010 Recommendation 2 | | |
|---|---|---|
| **Tasked Office** | **Breakdown into Subtasks** | **Due Date** |
| Task Force | Agencies submit a brief description of their plans to reevaluate their protection and mitigation strategies. Agencies nominate a participant for the Task Force subgroup to consolidate agency inputs—11/9/11 | Complete |
| FSME/NSIR | Initiate an NRC working group to evaluate whether or not the NRC's protection and mitigation strategies need to be revised | Complete |
| Subgroup | Consolidate agency inputs with respect to this recommendation and incorporate in 2014 Task Force report | Complete |
| Subgroup | Consolidate remaining agency inputs with respect to this recommendation and incorporate in 2018 Task Force report and determine if this recommendation needs to be reevaluated | 2018 |

| 2010 Recommendation 3 | **Evaluation of CsCl Export Licensing** | NRC Lead |
|---|---|---|
| | | Complete |

Task: Contingent upon the availability of alternative technologies, the Task Force recommends that the NRC evaluate whether the export licensing for Category 1 and 2 CsCl sources should be discontinued, taking the availability of disposal capacity and the threat environment into consideration.

Most Recent Citation: 2014 Report (Chapter 1—Advances in the Security and Control of Radioactive Sources)

2014 Report Context: The 2014 Report states the following:

> The NRC issued the "Draft Policy Statement on the Protection of Cesium-137 Chloride Sources" and held a public meeting on November 8-9, 2010, to solicit comments on it. The public meeting included technical sessions with panel presentations, followed by a facilitated discussion. The meeting was attended by the general public, users, representatives from health and industry associations, source and device manufacturers, alternate technology manufacturers (x-ray and Co-60), and Federal and State Government agencies.
>
> The majority of the comments supported the draft Policy Statement. All of the written and oral comments were considered when finalizing the Policy Statement. None of the comments resulted in changes to the basic principles that are in the Policy Statement.
>
> The Final Policy Statement was published in the *Federal Register* on July 25, 2011 (76 FR 44378). Specifically, with respect to regulatory actions, the Final Policy Statement indicates that the NRC monitors the threat environment and maintains awareness of international and domestic security efforts. In the event that changes in the threat environment necessitate regulatory action, the NRC, in partnership with the Agreement States, would issue additional security requirements, if necessary, to apply appropriate limitations for the use of CsCl in its current form. In addition, the NRC believes that, for the near term, it is more appropriate to focus on continued enforcement of the U.S. security requirements and to mitigate risk through cooperative efforts and voluntary initiatives of industries that currently manufacture and use CsCl sources. (2014 Task Force Report, p. 25)

Potential Issues: No known issues.

Agencies Involved: NRC and OAS.

Program Office Action: Since this recommendation is complete, no further action is necessary.

Resources: This recommendation is complete. No additional resources are necessary.

| 2010 Recommendation 3 | | |
|---|---|---|
| **Tasked Office** | **Breakdown into Subtasks** | **Due Date** |
| NRC | A decision on whether to limit the further use of these sources is contingent on existence of viable alternative technologies | Complete - Decision is in alignment with Final Policy on the Protection of Cesium-137 Chloride Sources, in which, for the near term, it is more appropriate to focus on continued enforcement of the U.S. security requirements and to mitigate risk through cooperative efforts and voluntary initiatives of industries that currently manufacture and use CsCl sources |

| 2010 Recommendation 4 | Evaluation of Disposal Options for Disused Sources | DOE/NNSA/NRC /OAS Lead |
|---|---|---|
| | | Ongoing |

Task: The Task Force recommends that the U.S. Government, regional compacts, and States continue to evaluate disposal options for disused radioactive sources, including options for handling a potentially large number of disused cesium chloride sources that may be replaced once viable alternatives are available.

Most Recent Citation: 2014 Report (Chapter 2—Status of the Recovery and Disposition of Radioactive Sealed Sources)

2014 Report Context: The 2014 Report states the following:

> While commercial disposal options for Class A, B, and C sealed sources waste have increased since 2010, a large number of challenges remain. There are currently no disposal options for disused sealed sources which exceed the generic radioactivity limits specified in the 1995 BTP, or for disused sources which are classified as GTCC LLRW. Commonly used sealed sources of these types include americium-241 (Am-241), and cesium chloride (CsCl) sources commonly used in both industry and medicine, and particularly significant from a National security, public health, and safety standpoint. (2014 Task Force Report, p. 39)

Potential Issues: Implementation of disposal options would require stakeholder acceptance, and some options may require Congressional action. The Texas Compact and Waste Control Specialists (WCS) have taken positive steps for acceptance of non-Texas compact LLRW at the WCS disposal facility, although uncertainties remain on the acceptance of this waste (e.g., waste acceptance criteria, quantities, schedule, and cost).

Agencies Involved: DOE, NRC, OAS, Conference of Radiation Control Program Directors (CRCPD), DHS, and EPA.

Program Office Action: TBD

Resources: Currently, this activity is not specifically budgeted, but would be covered by routine activities.

| 2010 Recommendation 4 | | |
|---|---|---|
| **Tasked Office** | **Breakdown into Subtasks** | **Due Date** |
| DOE, NRC, DHS | Evaluate recommendations of *Removal and Disposition of Disused Sources Focus Group of the Radioisotopes Subcouncil of the Nuclear Government and Sector Coordinating Councils* including:<br>1. Support range of DOE GTCC disposal alternatives addressed in GTCC Environmental Impact Statement (see 2006 Action 9-1)<br>2. Concentration averaging of sealed sources for disposal as Class A LLRW<br>3. Case-by-case exemption by existing compacts for disposal of discrete numbers of high-risk sealed sources<br>4. Physical destruction and down-blending for disposal as Class A LLRW<br>5. Co-disposal of foreign-origin Am-241 sources with domestic sources (see 2010 Recommendation 5) | TBD |
| DOE, NRC, DHS | Continue to communicate national disposal needs for disused sealed radioactive sources to Compacts and States that host LLRW disposal facilities | Ongoing |
| NRC | Issue final BTP on concentration averaging for LLRW, including commercial disposal of sealed sources | TBD |
| NRC | Investigate risk-informing the regulation for the disposal of LLRW, including sealed sources | TBD |

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| **2010 Recommendation 5** | **Disposal Options for Foreign-Origin Americium-241 Sources** | DOE lead |
| | | Ongoing |

Task: The Task Force recommends that Federal and State Governments investigate options such as providing short-term secured storage of sources recovered from U.S. owners that contain foreign-origin americium-241 radioactive material, so that these sources can be recovered now, and increase efforts to investigate options for disposal of these sources.

Most Recent Citation: 2014 Report (Chapter 2—Status of the Recovery and Disposition of Radioactive Sealed Sources)

2014 Report Context: The 2014 Report states the following: "Since the publication of the 2010 Task Force report, DOE has continued to investigate options for disposal of certain waste for which there is currently no identified disposal path, including foreign-origin Am-241, plutonium-238 (Pu-238), and Pu-239 sealed sources recovered by NNSA/GTRI." (2014 Task Force Report, p. 41)

Potential Issues: Options for the staging and storage of sources without a disposal path, such as foreign-origin Am-241, Pu-238, and Pu-239 sources, are limited.

Agencies Involved: DOE, NRC, OAS, CRCPD, and EPA.

Program Office Action: No particular NRC role, except to monitor progress. DOE/NNSA continues to investigate options for disposal of these sources.

Resources: Monitoring activities in this area would be considered part of routine activities. The NRC will participate as appropriate.

| 2010 Recommendation 5 | | |
|---|---|---|
| **Tasked Office** | **Breakdown into Subtasks** | **Due Date** |
| DOE | TBD, following completion of the GTCC EIS | TBD |

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| **2010 Recommendation 6** | **Update Inspection Procedures to Track Sources in Long-Term Storage** | NRC/OAS lead |
| | | Complete |

Task: The Task Force recommends that the NRC incorporate procedures to review the status, such as the date of, the reason for, and location of sources in long-term storage, in the current inspection program.

Most Recent Citation: 2014 Report (Chapter 2—Status of the Recovery and Disposition of Radioactive Sealed Sources)

2014 Report Context: The 2014 Report states the following:

> The intent of the recommendation was to "ascertain when a source goes from being an economic asset to a licensee to being disused and unwanted, with limited or expensive disposition options." The Task Force is now closing 2010 Recommendation 6 due to the increase in commercial sealed source disposal options. However, the Task Force has also concluded that a practice of sealed source use-status information sharing will encourage more efficient sealed source management, as well as the timely disposal of disused and unwanted sealed sources which now have a commercial disposal pathway.
>
> The NRC currently requires licensees that possess sealed sources to report annually through the NSTS whether or not their Category 1 and 2 sources are still in their possession, have been transferred to another licensed user, or have been disposed. However, neither these or other licensees that possess sealed sources are required to report to Federal or State regulators the 'use-status' of their sealed sources (i.e., whether or not their sources are in use or have become disused).
>
> The NSTS as currently configured could facilitate the exchange of such 'use-status' information for Category 1 and 2 sources, and a number of States already have registries to track sealed sources below the Category 1 and 2 threshold, should they wish to do so. If a licensee identifies a sealed source as 'in storage pending further use,' the intended purpose and timeframe for reuse would also be both relevant and beneficial information for licensees to consider and share through the NSTS and other appropriate tools used by regulators. On May 12, 2014, the NRC issued Regulatory Issue Summary (RIS) 2014-04 to encourage licensees to provide this information through the NSTS or through NRC Form 748 transaction reports. This RIS was issued to Agreement State regulators to share with their licensees, as appropriate.
>
> As currently configured, licensees may specify that sources are in "Long-Term Storage." Sharing this information will benefit both the licensees, which provide the use-status and planning information, as well as the regulators who receive it. For licensees, such a practice will encourage increased awareness of, and attention to, effective disused sealed source management, which may include financial and logistical planning for disposal, including related transportation costs and challenges. For sealed sources without a commercial disposal pathway, planning may involve coordination with source recyclers, including manufacturers, or consideration of other options for disposition of disused sources. This type of attention and planning will not only facilitate timely sealed source disposition, but also increase licensee awareness of the National security, public

health, and safety concerns related to keeping disused and unwanted sealed sources in storage for longer than necessary.

For regulators, 'use-status' information will increase their awareness of how many sealed sources under their purview are disused and in storage, where they are located, and what types of disposal challenges their licensees may encounter. It may also enhance the ability of regulators to foresee and manage instances in which licensees are unable to dispose of their sources before going out of business. For both regulators and licensees this type of information sharing will improve the quality and efficiency of sealed source management and disposition, which, in turn, can benefit National security, public health, and safety. Furthermore, current NRC regulations do not impose limits on the time that licensees may keep disused sources in storage, as long as all such sources are counted against license possession limits and properly stored in accordance with NRC safety and security regulations. (2014 Task Force Report, pp. 35-36)

Potential Issues: No known issues. In fact, following issuance of the RIS, a number of licensees, primarily reactor licensees with Category 1 or 2 quantities of radioactive materials, voluntarily reported the details pertaining to their sources in long-term storage in NSTS.

Agencies Involved: NRC and OAS.

Program Office Action: Since this recommendation is complete, no further action is necessary.

Resources: This recommendation is complete. No additional resources are necessary.

| 2010 Recommendation 6 | | |
|---|---|---|
| **Tasked Office** | **Breakdown into Subtasks** | **Due Date** |
| FSME | Issue RIS 2014-04 to encourage licensees to provide information pertaining to long-term storage through the NSTS or through NRC Form 748 transaction reports—5/12/14 | Complete |

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| **2010 Recommendation 7** | **Evaluation of Unwanted, Abandoned, or Impounded Source Disposition Methods** | OAS/DOE lead |
| | | Complete |

Task: The Task Force recommends that the U.S. Government, in collaboration with responsible State agencies, evaluate and develop a plan to improve, as necessary, processes for dealing with unwanted, abandoned, or impounded sources, including storage, reuse, recycling, or other disposition methods.

Most Recent Citation: 2014 Report (Chapter 2—Status of the Recovery and Disposition of Radioactive Sealed Sources)

2014 Report Context: The 2014 Report states the following:

> A special interest session was held during the 2011 CRCPD Annual Meeting on May 17, 2011, in Austin, Texas to discuss best practices related to storage of 'orphan' sources by States. Attendees were further encouraged to share best practices and emergency response planning information with States that may benefit from it. More importantly, however, the increase in commercial disposal options will significantly mitigate the problem. While States may still at times keep unwanted, abandoned, or impounded sources in storage, the number of such sources is expected to decrease steadily as the backlog and any new sources with a commercial disposal pathway are disposed.
>
> The closure of Barnwell in 2008, to all but three States, significantly increased awareness with regard to the National security, public health, and safety importance of sealed source management and disposal. While the expansion of commercial options for the disposal of disused and unwanted sealed sources has significantly diminished the urgency behind 2010 Recommendation 7, the collaboration among Federal, State, private sector, and non-governmental stakeholders continues and warrants closing this recommendation. (2014 Task Force Report, pp. 38-39)

Potential Issues: No known issues.

Agencies Involved: OAS, DOE, and NRC.

Program Office Action: While the expansion of commercial options for the disposal of disused and unwanted sealed sources has significantly diminished the urgency behind 2010 Recommendation 7, the collaboration among Federal, including the NRC (NMSS), State, private sector, and non-governmental stakeholders continues and warrants closing this recommendation.

Resources: This recommendation is closed. No additional resources are necessary.

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| **2010 Recommendation 8** | **Certified Type B Container Research and Development** | DOE lead |
| | | Ongoing |

Task: The Task Force recommends that the U.S. Government enhance support of short-term and long-term research and development of certified Type B containers for use in domestic and international source recovery efforts.

Most Recent Citation: 2014 Report (Chapter 2—Status of the Recovery and Disposition of Radioactive Sealed Sources)

2014 Report Context: The 2014 Report states the following:

> Since the 2010 Task Force report was published, NNSA/GTRI has procured vendor services for the design, development, testing, and certification of two Type B packages to support the recovery and transportation of Category 1 and 2 sources commonly used in irradiators and cancer treatment devices. The new containers together will enable shipment of nearly 100 percent of all commercially used devices containing Cs-137 and cobalt-60 (Co-60), which are particularly significant from a National security, public health, and safety standpoint. However, designing, testing, and producing new transportation packages are a multi-year project. The regulatory approval process alone for new package designs can be up to 18 months.
>
> The first of the NNSA/GTRI containers under development, the 435B, is an unshielded Type B container with a design appropriate for transport of a wide range of relatively common devices requiring Type B shipment. NNSA/GTRI expects the container to be certified for use in 2014. The second container, the 380B, is currently in the early stages of design and development. It will be a more complex shielded container designed for the transportation of a wide range of less common devices. NNSA/GTRI expects the 380B to be certified for use in 2016.
>
> To facilitate private sector utilization of these or similar Type B transport containers in the future, the NNSA/GTRI will make the new Type B container designs available without cost to companies in the U.S. and abroad interested in using or modifying them to broaden the availability of Type B containers for source recovery. The wider availability of these designs could also encourage disused sealed source disposition. This recommendation will be completed upon the submittal of the second Type B transportation container for certification, anticipated in fiscal year (FY) 2015. (2014 Task Force Report, p. 38)

Potential Issues: No known issues.

Agencies Involved: NRC, DOE, and DOT.

Program Office Action: No particular NRC role, except to monitor progress. NNSA/GTRI is supporting projects to develop new Type B containers in order to facilitate the availability of low-cost shipping containers for Off-Site Source Recovery Project recoveries. Currently, GTRI's

second container, the 380B, is in the early stages of design and development. NNSA/GTRI expects the 380B to be certified for use in 2016.

Resources: Monitoring activities in this area would be considered part of routine activities. The NRC will participate as appropriate.

| 2010 Recommendation 8 | | |
|---|---|---|
| **Tasked Office** | **Breakdown into Subtasks** | **Due Date** |
| DOE/NNSA | Provide 435B container to IAEA for international recoveries | 2016 |
| DOE/NNSA | Submit Safety Analysis Report for the 380B to the NRC for certification | 2016 |
| NRC | Certify the second new design for Type B containers, the 380B container | 2016 |

| | | |
|---|---|---|
| **2010 Recommendation 9** | **Alternative Technologies Research and Development** | DOE lead |
| | | Ongoing |

Task: The Task Force recommends that the U.S. Government enhance support of short-term and long-term research and development for alternative technologies.

Most Recent Citation: 2014 Report (Chapter 3—Progress in the Area of Alternative Technologies)

2014 Report Context: The 2014 Report states the following:

> Despite the progress and accomplishments since 2010 in the research and development of alternative technologies, specific technical and operational challenges remain which prevent potential replacements from making the transition from research and development or prototype to implementation. DHS/DNDO continues to be interested in, and DOE/NNSA and other government and non-government partners continue to track and assess, these technical obstacles. As a result, alternative technology program and funding support is targeted to areas in which it can be used most efficiently and effectively in the overall risk-reduction effort. Continued research and development is therefore necessary to further develop technologies and system components that will be suitable to replace devices containing Category 1 and 2 sealed sources. A comprehensive approach to the replacement of devices that use Category 1 and 2 sources with alternative technologies cannot be developed or implemented until progress is made in these research and development efforts. In its 2006 and 2010 Task Force reports, the Task Force recognized that policy support mechanisms would be essential in the successful transition to alternative technologies as they become available. (2014 Task Force Report, p. 48)

Potential Issues: The feasibility of replacement technologies will depend primarily upon technical, operational, and financial factors related to replacement. There may also be challenges related to disposal of the radioactive sealed sources replaced by alternatives.

Agencies Involved: DOE, DHS, and NRC.

Program Office Action: The NRC supports efforts to develop alternate forms of Cs-137 that would reduce the security risks and will monitor these developments.

Resources: This activity is not specifically budgeted, but would be covered by routine activities.

| 2010 Recommendation 9 | | |
|---|---|---|
| **Tasked Office** | **Breakdown into Subtasks** | **Due Date** |
| DOE/NNSA | Continue to support efforts to develop short-term and long-term research and development for alternative technologies and will monitor these developments | Ongoing |

| | | |
|---|---|---|
| **2010 Recommendation 10** | **Investigation of Options for the Replacement of Risk-Significant Sources** | NRC lead |
| | | Complete – Concept Transitioned to 2014 Recommendation 3 |

Task: The Task Force recommends that the U.S. Government, contingent upon the availability of alternative technologies and taking into consideration the availability of disposal pathways for disused sources, investigate options such as a voluntary prioritized, Government-incentivized program for the replacement of Category 1 and 2 sources with effective alternatives, with an initial focus on sources containing CsCl.

Most Recent Citation: 2014 Report (Chapter 3—Progress in the Area of Alternative Technologies)

2014 Report Context: The 2014 Report states the following: "2014 Recommendation 3 addresses both the development of programs to incentivize adoption of replacement technologies identified in 2010 Recommendation 10, as well as the first steps toward implementation of replacement technologies as they become available." (2014 Task Force Report, p. 48)

Potential Issues: No known issues.

Agencies Involved: NRC.

Program Office Action: No further action is necessary.

Resources: This recommendation is complete. No additional resources are necessary.

| 2010 Recommendation 10 | | |
|---|---|---|
| **Tasked Office** | **Breakdown into Subtasks** | **Due Date** |
| NRC | Develop options to incentivize the early decommissioning and replacement of Category 1 and 2 sources with viable alternatives is contingent upon the availability of alternative technologies | Concept transitioned to 2014 Recommendation 3 |

| 2010 Recommendation 11 | Evaluation of New Cesium Chloride Source Licensing | NRC lead |
|---|---|---|
| | | Complete |

Task: Contingent upon the availability of viable alternative technologies, the Task Force recommends that the NRC and the Agreement States review whether the licensing for new Category 1 and 2 CsCl sources should be discontinued, taking the threat environment into consideration.

Most Recent Citation: 2014 Report (Chapter 3—Progress in the Area of Alternative Technologies)

2014 Report Context: The 2014 Report states the following:

> In 2008, the NRC and Agreement States evaluated progress in the development of alternative technologies for medical and industrial applications which currently use CsCl devices. The 2008 assessment concluded that without sufficient replacement technologies for the medical and industrial services provided by CsCl sources, a policy to discontinue CsCl sealed source licensing would be premature as also stated by the CsCl Final Policy Statement. In addition, the current lack of financial assurance mechanisms and commercial disposal options for these high-activity sealed sources may also constitute a significant factor in future consideration of CsCl replacement. Similar disposal concerns arise with regard to implementation of replacement technologies more generally. The Task Force continues to assess the progress of alternative technologies for these sources and devices, as recognized in 2014 Recommendation 3. The Task Force also continues to monitor progress on sealed source disposal challenges. (2014 Task Force Report, pp. 48-49)

Potential Issues: No known issues.

Agencies Involved: NRC and OAS.

Program Office Action: Since this recommendation is complete, no further action is necessary.

Resources: This recommendation is complete. No additional resources are necessary.

| 2010 Recommendation 11 | | |
|---|---|---|
| **Tasked Office** | **Breakdown into Subtasks** | **Due Date** |
| NRC | A decision on whether to limit the further use of these sources is contingent on existence of viable alternative technologies | Complete |

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| **2014 Recommendation 1** | **Assessment of the Adequacy of and Strategies for Preventing and Mitigating Cybersecurity Vulnerabilities** | NRC |
| | | 2016 |

Task: The Task Force recommends that U.S. Government agencies assess the adequacy of and coordinate strategies for preventing and mitigating cybersecurity vulnerabilities related to Category 1 and 2 radioactive sources.

Most Recent Citation: 2014 Report (Chapter 1—Advances in the Security and Control of Radioactive Sources)

2014 Report Context: The 2014 Report states the following:

> With regard to Category 1 and 2 quantities of radioactive sources, current protective measures focus primarily on access control, detection, assessment, and response to unauthorized access events and work is ongoing to assess specific cybersecurity vulnerabilities. The cybersecurity landscape for these licensees varies greatly due to diversity of operating environments. An NRC-led working group, including Agreement State membership, was formed in 2013 to examine the potential threats to information systems of Category 1 and 2 radioactive source licensees' facilities and control systems. … Cybersecurity assessments focus on the following areas:
> – Devices that use software-based control systems, such as irradiators and medical radiosurgery devices;
> – Access control, intrusion detection, and assessment systems that may allow an adversary to gain access to material and avoid detection; and
> – Computer systems that licensees use to track source inventories.
>
> The overall goal of the working group is to assess potential vulnerabilities and identify the potential consequences that may occur from loss of control, or if the availability, integrity, or confidentiality of the data contained in the system were compromised.
>
> The NRC will continue to coordinate this and similar NRC assessments with its Federal Government and State partners. The Task Force will leverage, as appropriate, and not be duplicative of the efforts of on-going Federal initiatives such as Executive Order (EO) 13636 and Presidential Policy Directive (PPD) 21. (2014 Task Force Report, pp. 13-14)

Potential Issues: No known issues.

Agencies Involved: NRC and OAS.

Program Office Action: NMSS leads a materials cybersecurity working group addressing this topic for the NRC.

Resources: Participation in current NRC working group is covered as part of routine activities.

| 2014 Recommendation 1 | | |
|---|---|---|
| **Tasked Office** | **Breakdown into Subtasks** | **Due Date** |
| NMSS | Distribute preliminary survey to sample group and receive responses | Complete |
| NMSS | Develop an initial assessment matrix as part of the analysis to determine which licensee type/group, if any, are vulnerable to cybersecurity attacks | Ongoing |
| NMSS | Distribute survey to all Category 1 and 2 licensees and receive responses | May 2015 |
| NMSS | Recommend strategies to address cyber threats that could cause significant consequences | November 2015 |
| NMSS | Provide recommendations to the Commission via a Commission paper | 2016 |

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|---|---|---|
| **2014 Recommendation 2** | **Source Disposition/Disposal Financial Planning or Other Mechanisms** | NRC |
| | | Ongoing |

Task: The Task Force recommends that the NRC evaluate the need for sealed source licensees to address the eventual disposition/disposal costs of Category 1 and 2 quantities of radioactive sources through source disposition/disposal financial planning or other mechanisms. Disposition costs should include the cost of packaging, transport, and disposal (when available) of these sources.

Most Recent Citation: 2014 Report (Chapter 2—Status of the Recovery and Disposition of Radioactive Sealed Sources)

2014 Report Context: The 2014 Report states the following:

> A wide range of financial mechanisms are available for NRC consideration in addressing this recommendation. For example, financial assurance mechanisms acceptable to the NRC in the context of nuclear reactor or complex materials facility decommissioning may provide helpful models to determine requirements for Category 1 and 2 quantities of sealed sources. In addition, several Agreement States have instituted more stringent requirements to help cover the cost of disused and "orphan" sealed source packaging, transport and disposal unrelated to facility decommissioning. …
>
> These efforts demonstrate the potential feasibility and effectiveness of such requirements and may inform further potential NRC rulemaking activities undertaken to implement the recommendation. However, implementation of source disposition/disposal financial planning or similar requirements may have to address both Category 1 and 2 quantities of sealed sources that are new and have not yet been distributed to a licensed user, as well as those already in use. (2014 Task Force Report, pp. 34-35)

Potential Issues: It is important to integrate stakeholder input throughout the rulemaking process, if applicable, to help avoid imposing any potential new requirements that may place undue burden on those affected. Furthermore, the rulemaking process would carefully consider the compatibility category assigned to the rule, recognizing the importance of Agreement States maintaining flexibility in developing a compatible requirement that meets or exceeds the NRC standard.

Agencies Involved: NRC and OAS.

Program Office Action: NMSS leads a byproduct materials financial scoping working group addressing this topic for the NRC.

Resources: Participation in current NRC working group is covered as part of routine activities.

| 2014 Recommendation 2 | | |
|---|---|---|
| **Tasked Office** | **Breakdown into Subtasks** | **Due Date** |
| NRC | Establish a working group to perform a byproduct materials scoping study | Complete |
| NRC | Provide the NRC Commission the results of, including any recommendations from, the working group's scoping study | April 2015 |

| | | |
|---|---|---|
| **2014 Recommendation 3** | **Alternative Technologies** | DOE/NNSA |
| | | TBD |

Task: The Task Force recommends that the U.S. Government, as appropriate,[2] investigate options such as voluntary, prioritized, incentivized, programs for the replacement of Category 1 and 2 radioactive sources with effective alternatives. The Task Force further recommends that U.S. Government agencies, where appropriate, lead by example in the consideration of and transition to alternative technologies that meet technical, operational, and cost requirements.

Most Recent Citation: 2014 Report (Chapter 3—Progress in the Area of Alternative Technologies)

2014 Report Context: The 2014 Report states the following:

> Government incentives for adoption of the alternative technologies can encourage potential 'early-users' in the transition process. Before these incentive programs can be implemented, they must be at the appropriate level of government and must balance National security concerns with cost-effectiveness and efficiency. … As progress continues in the development of replacement technologies, the Task Force believes that it will be important for the Federal Government to lead by example. … A range of options are available for Federal agencies to encourage the adoption of replacement technologies which meet technical, operational, and cost requirements. For example, Federal agencies procuring Category 1 and 2 sealed sources and devices could document their assessment regarding the replacement of those devices in comparison with available non-radioactive alternatives. If shared among agencies, this information could help purchasers become familiar with replacement trends and decision factors, and could also be used to assess overall progress in conversion efforts. Similar assessment requirements could also be included in Federal research grant applications. These assessments would not only encourage consideration of potential replacement technologies during purchase and funding decisions, they would also serve as an important mechanism to inform stakeholder communities with regard to alternative technology options. (2014 Task Force Report, p. 49)

[2] NRC's statutory mandate precludes it from promoting one technology over another for non-safety or security reasons. The NRC would review in accordance with its procedures any new license application for new technologies.

Potential Issues: TBD.

Agencies Involved: DOE/NNSA.

Program Office Action: No particular NRC role, except to monitor progress.

Resources: Monitoring activities in this area would be considered part of routine activities. The NRC will participate as appropriate.

| 2014 Recommendation 3 | | |
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| **Tasked Office** | **Breakdown into Subtasks** | **Due Date** |
| DOE/NNSA | Develop a strategic roadmap to identify existing alternative technologies, technological gaps, future research and development needs and a systematic path forward to engage appropriate stakeholders | TBD |
| DHS | DHS-led Nuclear Sector Coordinating Council initiate working group to examine the status of alternative technologies | TBD |